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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,697	11/18/2003	Wayne J. Hamilton	BOI-0166US	5390
74576	7590	09/24/2008		
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EXAMINER				
BOES, TERENCE				
ART UNIT		PAPER NUMBER		
3682				
MAIL DATE		DELIVERY MODE		
09/24/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/715,697

**Applicant(s)**

HAMILTON, WAYNE J.

**Examiner**

TERENCE BOES

**Art Unit**

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Request for Continued Examination**

1. The request filed on 08/25/2008 for a Continued Examination (RCE) is accepted and a continued prosecution application has been established. An action on the RCE follows.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the line contact must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokel USP 3,803,934 in view of Rediker US 5,323,665 and further in view of McCaw 4,244,243.

Yokel discloses:

- a drum (see thin portion of gear 44 between shaft and teeth) having an inner cylindrical wall (see portion of gear 44 immediately adjacent shaft) adapted to be mounted on the shaft, an outer cylindrical wall (see root circle of gear 44), and a drum face (see face of drum facing in axial directions) connected to said inner cylindrical wall (see gear 44 in figure 1);
- a gear ring (see thicker portion of gear 44 between teeth and drum portion) mounted on and fixed to an outer circumference of the drum face; and gear teeth (see meshing teeth on outer circumference of gear 44) formed on an outer circumference of the gear ring,

- wherein a vector normal to the gear teeth at a radial and a vector perpendicular to the inner cylindrical wall at the radial have an angular difference that is less than  $30^\circ$  (C3/L10-20)
- a power generation system including an engine (C2/L14-15);
- a shaft (10) coupled to the engine; and
- a spur gear (18) mounted to the shaft;
- a receiving system (see transmission in abstract) including: a shaft (40) ;
- a low angle face gear (44) mounted to the shaft of the receiving system,
- a shaft aperture (see aperture through center of 44 through which shaft 40 extends)
- wherein the power generation system shaft (10) and the receiving system shaft (40) are positioned such that the shafts have an angular difference that is less than  $30^\circ$  (C3/L10-20).
- wherein the receiving system is a transmission (see abstract).
- wherein the transmission includes a rotary engine transmission (internal combustion engine is a rotary engine).

Yokel does not disclose symmetrical circular cavities, or a plurality of apertures.

Rediker teaches symmetrical circular cavities, or a plurality of apertures (31) for the purpose of reducing weight (C1/L50-54).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Yokel and provide symmetrical circular cavities, or a plurality of apertures, as taught by Rediker, for the purpose of reducing weight.

Yokel in view of Rediker does not disclose line contact.

McCaw teaches line contact (9 and 10) for the purpose of lower compressive stress (C1/L29-30)

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Yokel USP 3,803,934 in view of Rediker and provide line contact, as taught by McCaw, for the purpose of lower compressive stress.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokel USP 3,803,934 in view of Rediker US 5,323,665 US 5,323,665 in view of McCaw 4,244,243, as applied to claim 4 above, and further in view of Stone et al. US 3,942,387.

Yokel in view of Rediker and McCaw discloses a low angle face gear transmission. Yokel in view of Rediker and McCaw does not disclose a transmission used in a rotary aircraft. Stone et al. teaches an angle face gear transmission used within a rotary aircraft (see helicopter in title). Because both Yokel in view of Rediker and McCaw, and Stone et al. teach angle face gear transmissions, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a low angle face gear transmission within a rotary aircraft to achieve the predictable result of transmitting power from an engine to a propeller.

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERENCE BOES whose telephone number is (571)272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. B./  
Examiner, Art Unit 3682  
9/18/08

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3682